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| **Program No**: **07 Date:13/07/2021**  **SINE AND COSINE SERIES**  **AIM :** To write a program to print the sine and cosine series.  **ALGORITHM:**    1.Start  2. Get the angle and number of terms (n) want to evaluate from user  3. Convert angle to radian  4. Initialize t as 1 (because first value of cosine is 1) and calculate balance terms using the equation t= tx(-1)x. And add it with a sum each time.  5. Print the cosine sum value  6. To calculate Sine sum by using the equation sum =upto number of terms n.  7. Print the sine sum value  8. Stop  **PROGRAM:**   |  | | --- | | **/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***  **Title: SineAndCosineSeries**  **Done by : Deepak M S**  **Date: 13/07/2021**  **Aim: To write a program to print the sine and cosine series.**  **\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**  **#include <stdio.h>**  **#include <math.h>**  **int main()**  **{**  **//variable declaration and initialization**  **int i,n,option;**  **int fact=1,sign=-1;**  **float x,angle,sSum;**  **float cSum=1,t=1;**    **//get the angle**  **printf(" Enter the value for angle in degree : ");**  **scanf("%f",&x);**  **//get the value of n**  **printf(" Enter the value for n : ");**  **scanf("%d",&n);**    **//store the angle value to angle for printing purpose**  **angle = x;**  **//convert x to radian**  **x=x\*3.14159/180;**  **//store the value of x to sSum**  **sSum = x;**    **//calculation of cosine series and print**    **for(i=1;i<=n;i++)**  **{**  **t=t\*(-1)\*x\*x/(2\*i\*(2\*i-1));**  **cSum=cSum+t;**  **}**    **printf(" The value of Cos(%.1f) is : %f", angle, cSum);**      **/\*calculation of sine series and print**    **formula : sum = x - x^3/3!+x^5/5!-x^7/7!+......+x^n/n!**    **\*/**    **for(i=3;i<=n;i+=2){**  **fact = fact \* i\*(i-1);**  **sSum = sSum + sign \* pow(x,i)/fact;**  **sign = sign \* -1;**  **}**    **printf("\n The value of Sin(%.1f) is : %f", angle, sSum);**      **return 0;**  **}** |   **SAMPLE OUTPUT:**    **RESULT:**  Program run successfully and able to get the correct output |